No. 7300073

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

James E. Grundman

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS CERTIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

RICE

'Maxwell'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* fifth *day of* March *in the year of our Lord one thousand nine hundred and* seventy-six

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

MAXWELL Variety Rice

Heading Data

Year	Test Area	Planting Date	Variety	No. of Plots	Average Days To Head	Days Headed Earlier Than: Colusa	Earlirose
1969	Warner Ranch San Joaquin County	5-27-69	MAXWELL	10	91	12	10
			Colusa	2	103		
			Earlirose	2	101		
1970	Warner Ranch San Joaquin County	5-16-70	MAXWELL	4	83	15	
			Colusa	2	98		
1970	James Ranch Sutter Co.	5- 3-70	MAXWELL	7	87	14	7
			Colusa	2	101		
			Earlirose	2	94		
1971	Van Dyke Ranch Sutter Co.	5-17-71	MAXWELL	8	77	14	7
			Colusa	1	91		
			Earlirose	1	84		
1971	JB^2 Ranch Sutter Co.	5- 6-71	MAXWELL	5	95	8	6
			Colusa	3	103		
			Earlirose	2	101		
1971	Sorrenti Rch. San Joaquin County	5-17-71	MAXWELL	18	91	11	10
			Colusa	3	102		
			Earlirose	3	101		
1972	Mansur Ranch Sacramento County	5- 9-72	MAXWELL	6	89	9	8
			Colusa	6	98		
			Earlirose	6	97		
1972	Mansur Ranch Sacramento County	5- 9-72	MAXWELL	6	96	3	2
			Colusa	6	99		
			Earlirose	6	98		
1972	Van Dyke Ranch Sutter Co.	5-12-72	MAXWELL	5	85	14	10
			Colusa	5	99		
			Earlirose	5	95		
1972	Sorrenti Rch. San Joaquin County	5- 5-72	MAXWELL	10	97	12	11
			Colusa	10	109		
			Earlirose	5	108		

12 B, Exhibit B, Botanical Description of MAXWELL Variety Rice

MAXWELL variety rice plant is a tall statured rice plant readily distinguished by its broad, light green leaves.

The leaves of MAXWELL are pubescent on both the surface and the margins and the color is light green throughout the growing season under normal growing conditions and average fertility levels. The average leaf length of the second leaf from the top at booting stage is 25-35 cm. and the average leaf width is 12-13 mm. Leaves of MAXWELL variety rice assume an ascending position from the collar to a point from 1/4 to 1/2 the length of the leaf. At this location the leaf loses its triangular, longitudinally creased shape and erect posture and opens to its fullest width in a horizontal or nearly horizontal plane. This open, flat, horizontal leaf set gives the plant an appearance of "leafiness" which belies the actual leaf width of MAXWELL compared to other California varieties.

For comparison purposes, the leaves of Colusa variety rice are pubescent on both the surface and margins, but are dark green in color under normal growing conditions and average fertility levels. The average leaf length of the second leaf from the top at booting stage is 35-40 cm. and the average leaf width is 9-10 mm. Leaves of Colusa variety rice are markedly triangulated from a full length longitudinal crease, and are erect.

MAXWELL variety rice is a tall statured rice plant measuring 100 to 110 cm. (to tip of exserted panicle). MAXWELL variety straw appears to be comparable to Colusa variety straw which is very weak.

GRAIN DESCRIPTION

The distinguishing characteristic of MAXWELL variety grain is in the size, shape and appearance of the kernel. MAXWELL grain has straw-colored, pubescent hulls and is predominantly awnless, although terminally awned panicles are not uncommon in stressed or high-fertility conditions. The kernel, in the paddy, in the brown or white milled, is slightly longer and slightly narrower than the other California short-grain varieties of rice. When milled, MAXWELL variety grain is distinctly translucent compared to a chalky "white-belly" appearance of the other California short-grain varieties.

MAXWELL Variety Grain Measurements

MAXWELL variety grain measurements compare to Colusa variety grain as follows:

		Length	Width	Thickness	L/W Ratio
Paddy Rice -	MAXWELL	7.57mm	3.49mm	2.2mm	2.17:1
	Colusa	7.49	3.56	2.2	2.10:1
Brown Rice -	MAXWELL	5.70	2.99	2.0	1.91:1
	Colusa	5.52	3.18	2.0	1.74:1
White Rice -	MAXWELL	5.23	2.91	1.9	1.80:1
	Colusa	5.02	2.96	1.9	1.70:1

MAXWELL Variety Rice

No. 73073

Exhibit D

Novelty Statement

The variety most closely resembling Maxwell Variety rice is Colusa variety, also known as "1600". The significant characteristic differences between Colusa and MAXWELL are as follows:

Characteristic	Colusa	MAXWELL
Seedling Emergence	Vigorous, through 2" water in 8 days	Very vigorous, through 2" water in 6 days
Leaf Width	9 - 10mm.	12 - 13mm.
Leaf Color	Dark green	Light green
Heading Date (After planting)	95 - 105 days	80 - 90 days
Maturity Date (After planting)	130 - 140 days	110 - 120 days
Milled Grain Appearance (Kernels)	Chalky, opaque centers	Translucent

MAXWELL Variety Rice

No. 73073
Exhibit D

Novelty Statement

Appendix

Leaf Width Comparison

Sacramento Valley Test Plot 1971-1973

No.	Variety	(Range of 10 Samples) Leaf Width
9	Maxwell	11-12 mm
15	Maxwell	11-13
29	Maxwell	12-14
18	Colusa	8-11 mm
12	Colusa	9-11
37	Maxwell	12-14 mm
64	Maxwell	11-12
33	Colusa	9-10 mm
56	Colusa	8-10
4-15	Maxwell	12-14 mm
3-13	Maxwell	12-13
6-3	Maxwell	11-13
5-14	Colusa	9-11 mm
3-12	Colusa	9-11

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

"MAXWELL" VARIETY RICE

Submitted to: United States Department of Agriculture
Consumer and Marketing Service
Grain Division

February 1973

12A. Exhibit A, Origin and Breeding History of MAXWELL

MAXWELL (Oryza sativa, L.) is a short-grain variety of rice. It is a pure line selection produced by crossing the California Crop Improvement Association recognized medium-grain variety Earlirose and an unregistered experimental short-grain variety MRV-0171.(1)

BREEDING DATA

The breeding was accomplished in San Joaquin County near Oakdale, California in August 1967 by James E. Grundman. The breeding technique was through utilization of a hot water bath to emasculate a 35 floret clipped panicle of MRV-0171 variety. The clipped panicle was immersed in a vacuum bottle containing 40°C. water for 15 minutes. The emasculated panicle of MRV-0171 was then inserted, together with a flowering panicle of the Earlirose variety for pollen supply, into a glassine envelope.

---

(1) MRV-0171 is a pure line early-maturing selection from a chemically damaged field of the registered short-grain California variety Colusa (C.I. 1600). The damage occurred in a field belonging to Quenton Maxwell in 1965 through a late application of MCPA herbicide. Lines of MRV-0171 have been tested under the variety designations of MX-7013, MX-1169, MRV-0171, and under the name MARVEL.

SEED INCREASES

The F_1 generation seed of MAXWELL was planted indoors during the winter of 1967. Seed for the years 1968, 1969 and 1970 (generations F_2 through F_4) were planted in and selected from test plots in the San Joaquin and Sacramento Valleys. In each of the years seedling vigor and early maturity were prime considerations for selection as were purity and uniformity. Comparisons were made with existing commercial varieties. Harvesting and threshing operations for MAXWELL variety rice have been performed by hand and by a Vogel-type nursery plot thresher to insure varietal purity.

For the 1971 crop MAXWELL variety rice was produced in 100 panicle rows, 33 - 6-ft. by 6-ft. plots and one 1/10-acre plot.

For the 1972 crop, MAXWELL variety seed was increased through the planting of: 140 panicle rows, each 10 ft. in length for Breeder (2) quality seed; a 60 ft. by 100 ft. size plot of MAXWELL seed with a genetic and generation purity of Foundation quality seed; a partitioned 14-acre field containing 3½ acres of seed with a generation purity of Registered and 10½ acres of seed with a generation purity of Certified quality.

---

(2) The genetic purity of the seed classes of Breeder Seed, Foundation Seed, Registered Seed and Certified Seed, as described by the International Crop Improvement Association and the California Crop Improvement Association has been recognized and pursued. The 1972 crop MAXWELL variety production has been so designated for the purposes of clarity and convenience. Official California Crop Improvement Association recognition and approval of the Foundation, Registered and Certified classes of MAXWELL variety rice was received in February, 1973.

Plans call for the seed production for all classes of seed, from Breeders through Certified, to be handled on a proprietory basis according to established procedures of the California Crop Improvement Association.

VARIENT & OFF-TYPE PLANTS

Off-type and varient plant types have not appeared in MAXWELL variety seed fields.

Off-type plants of varient types which might appear, through contamination, in MAXWELL variety could be distinctly noticeable at virtually all stages of plant development, from seedling emergence to the time of harvest. Varient plants would be noticeable during the various stages as follows:

(1) Seedling Emergence: In water-sown rice, particularly in the panicle row nursery, differences are apparent in from 7 to 21 days after planting, depending upon water depth. MAXWELL variety rice emerges through the water from 2 to 5 days sooner than other established California varieties of rice.

(2) Tillering Through Booting Stages: During these stages, from approximately 45 days to 85 days after planting, depending on environmental factors,(3) the leaves of MAXWELL variety rice appear broader and lighter green in color, whereas the leaves of any off-type plants (such as the currently established California varieties) appear narrow and dark green. Off-type plants also can be noticed at these stages of development through such growth characteristic differentials as plant height.

---

(3) Fertility levels, time of planting, temperature of production area, etc.

(3) Time of Heading: At this stage, from 85 days to 95 days after planting, depending on environmental factors, MAXWELL variety begins to head. Heading of off-type plants will not occur for an additional 10 to 30 days.

(4) Tipping through Maturity: During this stage, approximately 100 to 130 days after planting, depending on environmental factors, panicles of MAXWELL are tipped and maturing, turning a straw color. Off-type plants at this stage would still be at the "straight head" or pollinating stage.

(5) Time of Harvest: At approximately 120 to 135 days from planting, depending on environmental factors, the grain of MAXWELL variety rice plants will be fully ripened. Varient plant types at this stage of growth would be easily ascertainable by their stage of immaturity or by the shape and/or size of their grain.

12 E. Exhibit E, Statement of the Basis of Applicant's Ownership

James E. Grundman, as applicant for the Plant Variety Protection Certificate for MAXWELL Variety Rice, claims sole ownership as the plant breeder and developer of MAXWELL Variety Rice.

FORM GR-470
(2-12-71)

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION	2. KIND NAME	FOR OFFICIAL USE ONLY
"Maxwell"	Rice (Short Grain)	PVPO NUMBER: 7 3 0 7 3
3. GENUS AND SPECIES NAME	4. FAMILY NAME (*Botanical*)	FILING DATE: 3-13-73 TIME: 11:00 A.M.
Oryza sativa L.	Japonica	
	5. DATE OF DETERMINATION: October, 1967	FEE RECEIVED: $150 CHARGES

6. NAME OF APPLICANT(S)	7. ADDRESS (*Street and No., or R.F.D. No., City, State, and ZIP Code*)	8. TELEPHONE AREA CODE AND NUMBER
James E. Grundman	1206 Burrows Street Broderick, California 95605	(Area 916) 371-9420

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (*Corporation, partnership, association, etc.*)	10. STATE OF INCORPORATION	11. DATE OF INCORPORATION
- -	- -	- -

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 12A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52, P.L. 91-577)*
- [X] 12B. Exhibit B, Botanical Description of the Variety
- [X] 12C. Exhibit C, Objective Description of the Variety
- [X] 12D. Exhibit D, Data Indicative of Novelty
- [X] 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. *(See Section 52, P.L. 91-577).*

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a), P.L. 91-577) (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations?	14C. If "Yes," to 14B, how many generations of production beyond breeder seed?
[ ] YES [X] NO	

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act (P.L. 91-577).

February 28, 1973
(DATE)

(DATE)

James E. Grundman
(SIGNATURE OF APPLICANT)

(SIGNATURE OF APPLICANT)

FORM GR-470 (REVERSE)

INSTRUCTIONS

S1-1

GENERAL: Send an original copy of the application, exhibits and $50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unles noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety.

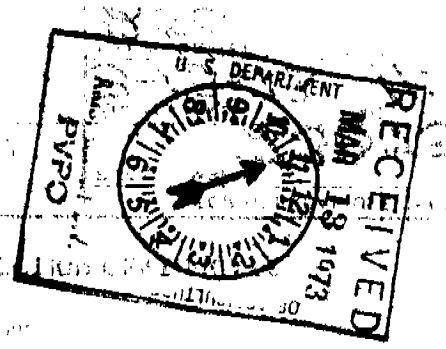
12a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

12b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.

12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.



FORM APPROVED: OMB NO. 40-R3712

FORM GR-470-17
(1-2-73)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Rice)

OBJECTIVE DESCRIPTION OF VARIETY

RICE (*ORYZA SATIVA*)

REFERENCES: *See Reverse.*

NAME OF APPLICANT(S)
James E. Grundman

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
(New Address) 10101 New Hope Rd.
Galt, CA 95632

FOR OFFICIAL USE ONLY

PVPO NUMBER
73073

VARIETY NAME OR TEMPORARY DESIGNATION
Maxwell

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. MATURITY (Seeding to 50% Heading):

LOCATION California AVERAGE DATE SEEDED May 15

[2] Season: 1 = VERY EARLY (85 days or less) 2 = EARLY (86 - 100) 3 = MIDSEASON (101 - 115) 4 = LATE (115 - or more)

[0][9][5] NUMBER OF DAYS

[2][0] NO. OF DAYS EARLIER THAN . . . [5]

[0][0] NO. OF DAYS LATER THAN . . . . . [0]

1 = BELLE PATNA 2 = BLUEBELLE 3 = NATO 4 = STARBONNET 5 = CALROSE 6 = REXORO

2. PLANT HABIT (Tiller Angle from Perpendicular at the Early Jointing Stage):

[2] 1 = SPREADING (more than 60°) 2 = INTERMEDIATE 3 = ERECT (less than 30°)

3. STEMS (Full Heading):

[1][1][0] CM. TALL (Soil level to tip of extended panicle on main culm)

[1][0] CM. SHORTER THAN . . . . . [5]

[0][0] CM. TALLER THAN. . . . . [0]

1 = BELLE PATNA 2 = BLUEBELLE 3 = NATO 4 = STARBONNET 5 = CALROSE 6 = REXORO

[0][8] NUMBER OF NODES

[4] INTERNODE COLOR (Outside)

[2] SEPTUM COLOR (Inside Node)

1 = LIGHT YELLOW 2 = CREAM 3 = GOLD 4 = GREEN 5 = REDDISH 6 = LIGHT PURPLE 7 = PURPLE 8 = DARK PURPLE 9 = OTHER (Specify) _____

[1] Tillering Ability (number of culms): 1 = 10 OR LESS (Belle Patna) 2 = 11 - 20 (Bluebonnet) 3 = ABOVE 20 (Century Patna)

[3] Strength: 1 = STURDY (Starbonnet) 2 = INTERMEDIATE (Belle Patna) 3 = WEAK

4. LEAF BLADE (First Leaf Below Flag Leaf):

[3][5] CM. LENGTH [1][2] MM. WIDTH

[1] Color: 1 = PALE GREEN (Starbonnet) 2 = MEDIUM GREEN (Bluebelle) 3 = DARK GREEN (Calrose) 4 = PURPLE 5 = RED 6 = OTHER (Specify) _____

[3] Pubescence: 1 = GLABROUS 2 = INTERMEDIATE 3 = PUBESCENT

[1] Flag Leaf Angle: 1 = HORIZONAL 2 = ASCENDING 3 = ERECT

[3][0] CM. LENGTH OF FLAG LEAF (Booting Stage)

[1][3] MM. WIDTH (widest point) OF FLAG LEAF (Booting Stage)

5. LEAF SHEATH (First Leaf Below Flag Leaf):

[2] Ligule Length: 1 = NONE 2 = 20 MM. OR LESS 3 = 21 - 34 MM. 4 = MORE THAN 34 MM.

Color:

[2] SHEATH (Outside) [1] COLLAR

[2] SHEATH (Inside) [1] LIGULE

[2] SHEATH (Seedling) [1] AURICLE

1 = COLORLESS 2 = GREEN 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

FORM GR-470-17 (Page 2 of 3 Pages) # 73073 MAXWELL

6. PANICLE:

[2] Type: 1 = OPEN 2 = INTERMEDIATE 3 = COMPACT

[2] Habit: 1 = DROOPING 2 = INTERMEDIATE 3 = ERECT

[1 8] CM. LENGTH

[3] Exsertion: 1 = LESS THAN 90% 2 = 90 - 99% 3 = 100% EXSERTION

7. SPIKELET:

[1] Stigma Color: 1 = COLORLESS (White) 2 = YELLOW 3 = PURPLE 4 = RED

8. LEMMA AND PALEA: 05 letter 5/10/75

[0 4] Color at Maturity

[0 4] Apiculus color at maturity

[0 2] Apiculus color at anthesis

01 = COLORLESS (White) 02 = GREEN 03 = YELLOW
04 = TAWNY 05 = STRAW 06 = GOLD
07 = BROWN FURROWS 08 = RED 09 = PURPLE
10 = PIEBALD 11 = BLACK 12 = OTHER (Specify) _____

[3] Pubescence: 1 = GLABROUS 2 = PUBESCENT ONLY ON LEMMA KEEL 3 = PUBESCENT

[3] Awn: 1 = AWNLESS 2 = TERMINAL SPIKELETS AWNED 3 = AWNED AND AWNLESS 4 = ALL SPIKELETS AWNED

[1 0] MM. AWN MAXIMUM LENGTH

9. SEED:

[2] Non-pigmented coat (Pericarp) ("Brown Rice" color): 1 = LIGHT 2 = MEDIUM 3 = DARKER

[4] Pigmented coat (Pericarp): 1 = GOLD 2 = PURPLE 3 = RED 4 = BROWN 5 = SPECKLED BROWN

[1] Scent: 1 = NONSCENTED (Common) 2 = LIGHTLY SCENTED (Sadri) 3 = SCENTED (Popcorn aroma - Della)

[1] Endosperm: 1 = NON-WAXY (common) 2 = WAXY (glutinous) [1] Endosperm: 1 = TRANSLUCENT, FEW CHALKY SPOTS 2 = CHALKY GERMTIP 3 = WHITE BELLY 4 = LARGE CHALKY CORE 5 = OPAQUE

[2] Shattering (Threshability): 1 = DIFFICULT THRESHING (Conway) 2 = THRESHES READILY 3 = SHATTERS

[2] Dormancy: 1 = LOW (0 days) 2 = MEDIUM (30 days) 3 = HIGH (90 days or more)

10. GRAIN:

[1] Paddy shape (length/width Ratio): 1 = SHORT (less than 2.2:1) 2 = MEDIUM (2.2:1 to 3.4:1) 3 = LONG (greater than 3.4:1)

MEASUREMENTS:

Grain Form	Length (mm.)	Width (mm.)	Thickness (mm.)	L/W Ratio	1000 Grains (Grams)
Paddy	07.6	3.5	2.1	2.1	27.1
Brown	05.7	3.0	1.9	1.9	22.5
Milled	05.2	2.9	1.9	1.8	19.9

MILLING QUALITY

[1 8] % HULLS [7 0] % TOTAL MILLED RICE

11. RESISTANCE TO LOW TEMPERATURE:

[3] Germination & Seedling vigor: 1 = LOW (Bluebelle) 2 = MEDIUM (Nato) 3 = HIGH (Caloro)

[2] Flowering (Spikelet fertility): 1 = LOW (Bluebelle) 2 = MEDIUM (Caloro) 3 = HIGH (Calrose)

12. RESISTANCE TO:

[2] Salinity: 1 = LOW (Bluebonnet) 2 = MEDIUM (Blue Rose) 3 = HIGH

[3] Alkalinity: 1 = LOW (Bluebelle) 2 = MEDIUM (Dawn) 3 = HIGH (Arkrose)

13. RESPONSE TO PHOTOPERIOD:

[3] 1 = NON-SENSITIVE (Belle Patna) 2 = WEAKLY SENSITIVE (Blue Rose) 3 = STRONGLY SENSITIVE (Caloro)

FORM GR-470-17 (Page 3 of 3 pages) # 730 73 MAXWELL

14. PYRICULARIA ORYZAE RESISTANCE (See international races found under References, items 2 and 4 below.)
(0 = Not Tested; 1 = Susceptible; 2 = Resistant):

GROUP	IA	IB				IC			ID				IE		IG		IH				
NUMBER	109	1	33	49	54	1	17	19	1	8	13	14	1	3	1	2	1				
RESISTANCE		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

15. DISEASE RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant):

[0] CERCOSPORA ORYZAE	[0] ENTYLOMA ORYZAE	[0] FUSARIUM PANICLE BLIGHT
[0] HELMINTHOSPORIUM ORYZAE	[0] HOJA BLANCA VIRUS	[0] LEPTOSPHAERIA SALVINII
[0] PYTHIUM SEEDLING BLIGHT	[0] RHIZOCTONIA ORYZAE	[0] STRAIGHT~~HEAD~~ HEAD
[0] TILLETIA BARCLAYANA	[0] WHITE TIP NEMATODE	[0] OTHER (Specify)

16. INSECT RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] GRASS HOPPER	[0] LEAF HOPPER	[0] RICE HISPA
[0] RICE MIDGE	[0] STEM BORER	[0] STINK BUG
[0] SWARM CATERPILLAR	[0] WATER WEEVIL	[0] OTHER (Specify)

17. INDICATE A VARIETY WHICH MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Tillering	Colusa	Seed Shape	Earlirose
Lodging	Colusa	Endosperm Transp.	Earlirose
Leaf Angle	Italica Livorno	Milling Quality	Colusa
Leaf Color	Italica Livorno	Cook & Proc. Quality	Colusa

18. GIVE THE FOLLOWING AVERAGE DATA FOR SUBMITTED AND A SIMILAR VARIETY

VARIETY	PARBOIL CANNING STABILITY (% Loss)	PROTEIN * (%)	AMYLOSE ** (%)	ALKALI REACTION *** 1.7	ALKALI REACTION *** 2.0	GELATINIZATION TEMPERATURE (°C)
SUBMITTED	28.9	9.8	20.2	0	7.0	Low
SIMILAR	27.1	8.7	20.2	0	7.0	Low
NAME OF SIMILAR VARIETY	Colusa	Colusa	Colusa	-	Colusa	Colusa

*Hulled Rice - Dry Wt. **Milled Rice 11 - 12% Moisture ***Average spreading value in 1.7% and 2.0% KOH Solution.

REFERENCES

1. C. R. Adair et al, 1972. Rice in the United States: Varieties and Production. USDA Handbook No. 289 (Rev.), 124 pp.
2. J. G. Atkins, et al, 1967. An International Set of Rice Varieties for Differentiating Race of Pyricularia Oryzae. Phytopath. 57:297-301.
3. Te-Tzu Chang, 1965. The Morphology and Varietal Characteristics of the Rice Plant. IRRI Los Banos, Philippines Tech. Bulletin 4.
4. K. C. Ling and S. H. Ou, 1969. Standardization of the International Race Numbers of Pyricularia Oryzae. Phytopath. 59:339-342.
5. B. D. Webb et al, 1968. Characteristics of Rice Varieties in the USDA Collection. Crop Sci. 8:361-365.
6. Nickerson's or any recognized color fan may be used to determine plant colors of the described variety.

COMMENTS: